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IDENTIFIERS *Illinois

ABSTRACT

This project presented a conceptual model for adapting with change and the strategies and procedures for introducing change skills instruction into vocational programs to groups of vocational educators and administrators at sites throughout Illinois. Following the presentations, the project directors solicited feedback from the persons who attended about the heuristic value of the conceptual model and the practical utility of the various strategies and procedures for introducing change skills instruction. The project also attempted to integrate the products developed through this project with the strategies used by the Competency-Based Vocational Education (CBVE) Project. This final report of the project includes documentation of all project activities; a summary of the evaluative feedback from workshop participants; a summary of the technical assistance provided to the CBVE sites; and strategies, procedures, and methods for disseminating the information generated in the project. A major portion of the final report consists of copies of major ideas and articles disseminated by the staff. (KC)

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ED261219

Toward the Adoption and
Utilization of a Model,
Strategies and Procedures
for Introducing Change
Skills Instruction into
Vocational Programs

Project Staff

Administrative:
M. Harry Daniels
Joseph S. Karmos

Developers:
M. Harry Daniels
Joseph S. Karmos
Cheryl A. Presley

Department of Educational
Psychology
College of Education
Southern Illinois University
Carbondale, Illinois

Illinois
State Board of
Education

Walter W. Naumer, Jr.
Chairman

Donald G. Gill
State Superintendent
of Education

Department of
Adult, Vocational
and Technical
Education

Research and
Development
Section

July, 1985

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CE042423

Official Project Title: Toward the Adoption and Utilization of a Model, Strategies, and Procedures for Introducing Change Skills Instruction into Vocational Programs.

Department of Adult, Vocational and Technical Education Funding Agreement Number: R31-24D-036

Project Director(s): Dr. Harry Daniels and Dr. Joseph Karmos, Professors of Education, Department of Educational Psychology

Location of Funded Agency: Department of Educational Psychology, College of Education, Wham Education Building, Carbondale, Illinois 62901

Time Period Covered: July 1, 1984 - June 30, 1985

Major Accomplishments of the Project:

1. Presented the conceptual model for adapting with change and the strategies and procedures for introducing change skills instruction into vocational programs to groups of vocational educators and administrators at selected sites throughout the state.
2. Solicited feedback about the heuristic value of the conceptual model and the practical utility of the various strategies and procedures for introducing change skills instruction from the individuals who attended each of the presentations.
3. Initiated efforts to integrate the products developed through this project with the strategies utilized by the Competency-Based Vocational Education Project (CBVE).
4. Produced a final report which includes:
 - a. documentation of all project activities,
 - b. a summary of the evaluative feedback from workshop attendants,
 - c. a summary of the technical assistance provided to the CBVE sites, and
 - d. strategies, procedures and methods for disseminating the information generated in the project.

Potential Impact on Vocational Education:

This project provided vocational teachers and administrators as well as interested others with: (a) a set of educational strategies and procedures that may be implemented within the curriculum to prepare students to adapt with change, (b) documentation of the need for the inclusion of these strategies and procedures, (c) policy proposals that may be utilized to integrate these strategies and procedures with existing curriculum, and (d) evidence of how this project relates to other efforts to improve vocational education instruction, including the CBVE. These four outcomes build on the traditional set of skills that are taught in vocational programs, but will enable students to assume responsibility for the management and direction of their careers.

Products To Be Delivered:

1. Quarterly Progress Reports (October 1, January 1, April 1), and
2. Twelve copies of final report, Strategies and Procedures for Introducing Change Skills into Vocational Programs, delivered to DAVTE by June 30.

Expenditure of Funds:

Total expenditures for last years grant as of June 30, 1985 were: \$57,476. The original budget was \$60,000. The discrepancy was due to the fact that projected AND expected travel did not occur because some people were out of the country, on vacation, or quit.

Paid Participants in the Activity:

Dr. Harry Daniels, Associate Professor of Education at SIU-C worked in the public schools for seven years, both as a junior high school teacher and as a high school counselor. In the later position he was primarily responsible for developing and implementing a systematic career guidance program for students in grades 10 - 12.

During the last four years he has taught in the Department of Educational Psychology and the Department of Vocational Education Studies. His primary teaching responsibilities are in the area of career planning, career planning practicum, and occupational education. He also served as the coordinator of the Career Counseling Center at SIU-C during the 1979-1980 academic year, and continues to serve as a member of the training staff of that facility.

Dr. Daniels was co-director of a DAVTE grant to revise the Illinois Career Guidance Handbook. In addition, he has published Facilitating Students Career Development, and numerous articles dealing with career decision making, career education, and program evaluation. He is also actively engaged in a research project designed to analyze the relationship of career decisions to cognitive and psycho-social development among adolescents and young adults.

Dr. Joe Karmos, Professor at SIU-C, taught in the public schools for 14 years, both at the elementary and secondary levels. For the past eight years he has taught in the Department of Vocational Education and in the Department

of Educational Psychology. His primary teaching is with adults in an occupational education program. He also supervises Master's level interns teaching in public schools and other instructional settings.

For six years, he was Associate Director of the Comprehensive School Mathematics Program, a curriculum development project for the Office of Education and the National Institute of Education. For another two years he worked as evaluator for that math program. In 1980, he co-directed a 12 month teacher training program for elementary school teachers which was sponsored by the National Science Foundation.

Dr. Karmos has extensively published in the areas of self-esteem, locus of control, responsibility, egocentrism, and communication skills. He also has just recently published the book Help for Job Hunters.

Cheryl Presley, Researcher, Department of Educational Psychology, has taught both in the public schools and at the college level in the Department of Curriculum Instruction and Media, where her assignment was teacher education.

Currently Ms. Presley is a doctoral student in the Department of Educational Psychology specializing in counseling. Since 1981, Ms. Presley has served as a consultant for various grants, made numerous presentations dealing with training parents to work with adolescents, served as a counselor in the Adult Outpatient division of the Community Mental Health Clinic, assisted in developing a model and training volunteers for crisis phone intervention, served as a member of the Crisis go-out team for Jackson County, and made presentations of the model developed by the grant to various counselors and vocational educators.

Ms. Presley has published in the area of self-esteem and school achievement, parent involvement and training, and crisis training as well as computer software for use in the classroom.

Resource Listing:

a. Material Resources: Resources obtained through this project have been added to the library of the Department of Vocational and Technical Education.

b. Human Resources: Aside from the project staff, many people contributed valuable time, information, support, and feedback to the "Strategies and Procedures for Introducing Change Skills into Vocational Programs" project. Among them are:

Tom Boldrey
Kinetic Systems Corporation
11 Maryknoll Dr.
Lockport, IL

Urban Oen
Lake County Area Vocational Center
19525 W. Washington St.
Grayslake, IL

Don Koleson
Assoc. Dean of Tech. Ed.
Belleville Area College
2500 Carlyle Rd.
Belleville, IL

Professor James Greenan
Dept. of Vocational & Technical
Education
College of Education
University of Illinois
Urbana-Champaign, IL

Dr. Beverly Stitt
Southern Illinois University
Dept. of Voc. Ed. Studies
Carbondale, IL

Ms. Greer Cowley
Southern Illinois University
Dept. of Voc. Ed. Studies
Carbondale, IL

Dr. Richard F. Bortz
Southern Illinois University
Dept. of Voc. Ed. Studies
Carbondale, IL

Phil Viso
Assistant Superintendent
Chicago Public Schools
Chicago, IL

John Cassani, Director
Northwestern Illinois Career
Guidance Center
1515 S. 4th Street
DeKalb, IL

Pat Morgan
Chicago United
6 N. Michigan Ave.
Chicago, IL

Dave La Bonte
Capital Area Vocational Center
2201 Toronto Road
Springfield, IL

Dave Dimmlich
Educational Service Region
Courthouse, 15 N. Galena Avenue
Freeport, IL

Jan Lathrop
Northern Illinois University
Vocational, Technical & Career Ed.
155 Gabel Hall
De Kalb, IL

Greg Valentine
Lake County Area Vocational Center
19525 W. Washington Street
Grayslake, IL

Dr. Gordon Dveirin
10905 Simms St.
Broomfield, Colorado

In addition, the administrative council of the Department of Adult Vocational and Technical Education, directors of the 12 Regional Guidance Centers, the public schools, and counselors of displaced workers have each in their own way contributed time, suggestions and recommendations regarding project activities. The input of all contributors was significant to the growth and success of the project.

Major Accomplishments and Significant Findings of the Project:

The major accomplished goals and objectives were:

1. Presented the conceptual model for adapting with change and the strategies and procedures for introducing change skills instruction into vocational programs to groups of vocational educators and administrators at selected sites throughout the state.
2. Solicited feedback about the heuristic value of the conceptual model and the practical utility of the various strategies and procedures for introducing change skills instruction from the individuals who attended each of the presentations.
3. Initiated efforts to integrate the products developed through this grant with the strategies utilized by the Competency-Based Vocational Education Project (CBVE).
4. Produced a final report which includes:
 - a. documentation of all project activities,
 - b. a summary of the evaluative feedback from workshop attendants,
 - c. a summary of the technical assistance provided to the CBVE sites, and
 - d. strategies, procedures and methods for disseminating the information generated in the project.

The Major Activities and Events:

The major activities and events which led toward the attainment of the project goals and objectives include:

Objective 1: Presented the conceptual model for adapting with change and the strategies and procedures for introducing change skills instruction into vocational programs to groups of vocational educators and administrators at selected sites throughout the state.

- 1.1 Made a presentation entitled "Preparing for the World of Work" to the Regents Conference on Higher Education in Nashville, Tennessee. This presentation was made by Joe Karmos.
- 1.2 Made a presentation at ETE and Region 5 Career Guidance Center entitled "Preparing for Change in High Tech Times" in Joliet, Illinois. This presentation was made by Joe Karmos, Cheryl Presley, and Harry Daniels.
- 1.3 Revised and gathered data relevant to the visual representation of the model.
- 1.4 Presented the model to the Illinois Vocational Association Convention in Springfield in August. The presentation was made by Harry Daniels, Joe Karmos, and Cheryl Presley.
- 1.5 Revised areas of the Model based on feedback from audience which was comprised of over 30 teachers, 3 directors, and 4 administrators.
- 1.6 Met with advisory committee to gather input and ideas relevant to efficacy of utilization of the model within vocational education.
- 1.7 Contacted Center for the Family in Transition in California for the purpose of obtaining research information pertinent to their grant and utilization of transition training.
- 1.8 Submitted article to Threshold magazine for publication. The article is for dissemination of information about our model, its implementation, and utility for vocational educators. The article is written by Joe Karmos, Cheryl Presley, Harry Daniels, and Ann Karmos.
- 1.9 Presented model at IGPA convention November 15, 1984. This presentation was entitled "Toward a Balanced Self: Living and Working" and was made by Cheryl Presley and Joe Karmos.
- 1.10 Met with advisory committee in November to focus on project goal attainment, refinement and strategies for dissemination.
- 1.11 Revised and edited the paper for National Center for Research in Vocational Education entitled "Toward a Pretechnical Curriculum" (see attached executive summary - appendix A).
- 1.12 Submitted a final draft of "Toward a Pretechnical Curriculum" to National Center which was sent to ISBVE INAM.
- 1.13 Submitted article to Journal of Vocational Education for consideration.

- 1.14 Made a presentation to Student Teacher colloquium. This presentation was made by Cheryl Presley.
- 1.15 Made a presentation in Washington, D.C. on December 14, to administrators of National Vocational Education Association at the Department of Education. This presentation was made by Harry Daniels, Joe Karmos, and Cheryl Presley.
- 1.16 Multiple presentations were made at Air Force base in Santa Barbara, California by Joe Karmos.
- 1.17 Made a presentation in Mt. Vernon at Educational Conference October 26. This presentation was made by Joe Karmos, Cheryl Presley, and Harry Daniels.
- 1.18 Presentation at ICTM conference was made at Illinois State Normal October 27. This presentation was made by Cheryl Presley.
- 1.19 A presentation and workshop was delivered to the CBE site directors at the Lake County Vocational Center. This presentation was made by Harry Daniels and Cheryl Presley.
- 1.20 A presentation was delivered to ISBVE for special populations in Chicago in January, 1985. This presentation was made by Harry Daniels and attended by Cheryl Presley.
- 1.21 A presentation was made at the IVA/DAVTE workshop on March 22, 1985 at Harper College. This presentation addressed change skills as basics. The presentation was made by Joe Karmos and Cheryl Presley.
- 1.22 A meeting was held with Tom Boldrey to identify needs for presentation at Joliet Center. This meeting was attended by Cheryl Presley.
- 1.23 A presentation was made by Joe Karmos to the Association of Teacher Educators in Las Vegas, Nevada.
- 1.24 Nancy Schlossberg author of Counseling Adults in Transition was contacted regarding a scale which assesses extent of adaptation to transition.
- 1.25 A presentation was made to graduate students in Teacher Effectiveness Training Course which dealt with transition training. This presentation was made by Cheryl Presley.

Objective 2: Solicited feedback about the heuristic value of the conceptual model and the practical utility of the various strategies and procedures for introducing change skills instruction from the individuals who attended each of the presentations.

- 2.1 Met with advisory committee, consultant Gordon Dveirin, the project administrator Peter Seidman to clarify goals of project for next year, synthesize feedback from various sources, and clarify needs of state, CBE sites, and ETE sites relative to project efforts. This meeting was attended by the entire staff.

- 2.2 Sent a letter to Tom Boldrey, John Cassani, Don Coleson, Pat Morgan, and Marsha Anderson requesting that they serve on our advisory committee for the FY 1984 - 1985. All accepted the position.
- 2.3 Received feedback from presentation made at IVA convention in Springfield (see appendices).
- 2.4 Sent advisory committee a rough draft of report for National Center for Research in Vocational Education to obtain feedback on Implementation Strategies.
- 2.5 Responded to request from Tom Erikson to write an article for Threshold magazine.
- 2.6 Attended the project directors meeting in Springfield, Illinois. This was attended by Joe Karmos and Cheryl Presley.
- 2.7 Received acceptance of publication sent to Threshold magazine. Article appeared in the January 1 issue. Copy of article was included in July quarterly report.
- 2.8 Contacted Gordon Dveirin about position as consultant to the grant and future meeting options.
- 2.9 An advisory committee meeting was held where Gordon Dveirin assisted the staff and advisory committee in identifying strategies, commitment and goals for introducing changes into Vocational Education Programs. This meeting was held by Joe Karmos and Cheryl Presley.
- 2.10 Received feedback from reviewers regarding implementation of the model in vocational education. Results of this interaction appear in the implementation section of National Center for Research paper available in April.
- 2.11 Received constructive feedback from our advisory committee regarding our project efforts.
- 2.12 An article entitled "The Challenge of Change" was submitted and accepted by Illinois Guidance and Personnel Quarterly for publication. This article was written by Cheryl Presley.
- 2.13 Paul Jacobs of the Board of Education, Trenton, New Jersey, shared their project efforts dealing with critical thinking (problem solving). This contact was generated by Cheryl Presley.
- 2.14 The paper "Preparing For a Pretechnical Curriculum" was published by National Center for Research in Vocational Education. This paper was written by Harry Daniels, Joseph Karmos, and Cheryl Presley.

Objective 3: Suspended

Objective 4: Suspended

Objective 5: Initiated efforts to integrate the products developed through this grant with the strategies utilized by the Competency-Based Vocational Education Project (CBVE).

- 5.1 Held a 2 day meeting with CBE site directors and Urban Oen to develop task lists for use by CBE personnel. This meeting was attended by the entire project staff.
- 5.2 Met with Bev Stitt and Greer Cowly, CBE regional directors to clarify and refine task lists. This meeting was attended by Cheryl Presley.
- 5.3 Produced a task list for CBE personnel of communication skills. This was produced by Cheryl Presley.
- 5.4 An all day workshop was delivered to CBE site directors which identified perceived needs of site directors as well as elucidation of project products. This workshop was delivered by Cheryl Presley and Harry Daniels.

Illinois State Board of Education

Department of Adult, Vocational and Technical Education Research and Development Section

Product Abstract

1. Title of material "TOWARD THE ADOPTION AND UTILIZATION OF A MODEL STRATEGIES AND PROCEDURES FOR INTRODUCING CHANGE SKILLS INSTRUCTION INTO VOCATIONAL PROGRAMS"

2. Date material was completed June, 1985

3. Please check one: New material ☒ Revised material ☐ Field-tested material ☐

4. Originating agency SOUTHERN ILLINOIS UNIVERSITY

Address Dept. of Ed. Psych., Carbondale, IL Zip Code 62901

5. Name(s) of developer(s) Joe Karmos, Harry Daniels, Cheryl Presley

Address Same as above Zip Code

6. Developed pursuant to Contract Number R31-24D-036

7. Subject Matter (Check only one according to Department of Education Code):

Code

☐ 01 Agricultural Education
☐ 03 Business and Office Education
☐ 04 Distributive Education
☐ 07 Health Occupations Education
☐ 09 Home Economics Education

☐ 10 Industrial Arts Education
☐ 16 Technical Education
☐ 17 Trade and Industrial Education
☐ 22 Cooperative Education
☐ Career Education
☒ Other (Specify) New Basics

8. Education Level:

☐ Pre-K Thru 6 ☒ 7-8 ☒ 9-10 ☒ 11-12
☒ Post-Secondary ☒ Adult ☒ Teacher (Pre-service)
☐ Administrator (Pre-Service) ☐ Other (Specify)

9. Intended for Use By:

☒ Student ☒ Classroom Teacher ☒ Local Administrator
☒ Teacher Educator ☒ Guidance Staff ☒ State Personnel
☐ Other (Specify)

10. Student Type:

☒ Regular ☒ Disadvantaged ☒ Handicapped ☐ Limited-English Proficiency ☒ Other (Specify) Adult

11. Medium and Format of Materials:

☒ HARDCOPY ☐ VIDEOTAPE ☐ FILM ☐ MICROFICHE

No. of pages 66 ☐ Minutes ☐ Minutes ☐ B & W
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☐ Hard bound ☐ Color ☐ Color ☐ Color
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Diagrams: Yes ☐ No ☐

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Zip Code 62777

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Address Dept. Adult Vocational & Tech. Ed.
Springfield, Illinois

Zip Code 62777

14 What level(s) of assistance is required to provide implementation of this outcome?

☒ awareness

☒ understanding

☒ deciding

☒ implementing

15 Are Consultative/Inservice (or staff development) available? Yes _____ No _____

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Research and Development Section, E-426
100 North First Street
Springfield, IL 62777
(217) 782-4620

16 General Description (State the general objective and suggested method of use. Summarize the content and tell how it is organized. Write the description so that it can be used to promote the material. Continue on back of this sheet or on another sheet, if necessary) see other side

17 Person Completing this Abstract Cheryl Prestley

Full Address

Dept. Educational Psychology

Southern Illinois University

Carbondale, IL

Zip 62901

This final report synthesizes year long project efforts, presents recommendations and conclusions based on these efforts, and includes copies of major ideas and articles disseminated by the staff.

Illinois State Board of Education

Department of Adult, Vocational and Technical Education Research and Development Section

Product Abstract

1. Title of material "BASIC SKILLS FOR WORK AND LIVING: A MODEL FOR SELF-EMPOWERMENT"

2. Date material was completed October, 1984

3. Please check one: New material ☒ Revised material ☐ Field-tested material ☐

4. Originating agency SOUTHERN ILLINOIS UNIVERSITY

Address Dept. Educational Psychology, Carbondale, IL Zip Code 62901

5. Name(s) of developer(s) Joe Karmos, Cheryl Presley, Harry Daniels, Ann Karmos

Address same as above Zip Code

6. Developed pursuant to Contract Number R31-24D-036

7. Subject Matter (Check only one according to Department of Education Code):

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☐ 01 Agricultural Education
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☐ 22 Cooperative Education
☒ Career Education
Other (Specify) New Basics

8. Education Level

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☒ Post-Secondary
☐ Administrator (Pre-Service)

☒ 7-8
☒ Adult

☒ 9-10
☒ Teacher (Pre-service)
☐ Other (Specify)

9. Intended for Use By:

☒ Student
☒ Teacher Educator
☐ Other (Specify)

☒ Classroom Teacher
☒ Guidance Staff
☒ Local Administrator
☒ State Personnel

10. Student Type:

☒ Regular
☐ Limited-English Proficiency

☒ Disadvantaged

☒ Handicapped
☒ Other (Specify) Adult

11. Medium and Format of Materials:

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☐ Color
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☐ B & W
☐ Color

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Address Dept. Adult, Vocational, & Tech. Ed.
Springfield, IL

Zip Code 62777

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☒ understanding

☒ deciding

☒ implementing

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17 Person Completing this Abstract Cheryl Prestley

Full Address

Dept. Educational Psychology

Southern Illinois University

Carbondale, IL

Zip 62901

This article presents a model by which contemporary education may provide opportunities for students to learn to be adaptive in the uncertain future. The article describes the model and three classes of adaptive skills in detail. It also gives suggestions for strategies and implementation within vocational education programs.

Illinois State Board of Education

Department of Adult, Vocational and Technical Education Research and Development Section

Product Abstract

1 Title of material "COUNSELING FOR TOMORROW: THE CHALLENGE OF CHANGE"

2 Date material was completed January, 1985

3 Please check one: New material ☒ Revised material ☐ Field-tested material ☐

4 Originating agency SOUTHERN ILLINOIS UNIVERSITY

Address Dept. Educational Psychology, Carbondale, IL Zip Code 62901

5 Name(s) of developer(s) Cheryl Presley

Address same as above Zip Code

6 Developed pursuant to Contract Number R31-24D-036

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☐ Audio	☐ Audio	☐ Reel	_____
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Springfield, IL

14 What level(s) of assistance is required to provide implementation of this outcome?

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☒ deciding	☒ implementing

15 Are Consultative/Inservice (or staff development) available? Yes _____ No _____

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 (217) 782-4620

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17 Person Completing this Abstract Cheryl Presley

Full Address

Dept. Educational Psychology
Southern Illinois University
Carbondale, IL Zip 62901

This article presents strategies and methods by which counselors can incorporate transition skill instruction both into the school and inter-personal settings which students are involved. Issues which make transition skills training essential are discussed as well as presenting a strategy for utilizing these skills.

Illinois State Board of Education

Department of Adult, Vocational and Technical Education Research and Development Section

Product Abstract

1. Title of material "DEVELOPING A PRETECHNICAL CURRICULUM"
2. Date material was completed December, 1984
3. Please check one: New material ☒ Revised material ☐ Field-tested material ☐
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Address Dept. Educational Psychology, Carbondale, IL Zip Code 62901
5. Name(s) of developer(s) Harry Daniels, Joe Karmos, Cheryl Presley
Address same as above Zip Code
6. Developed pursuant to Contract Number R31-24D-036
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☐ 01 Agricultural Education
☐ 03 Business and Office Education
☐ 04 Distributive Education
☐ 07 Health Occupations Education
☐ 09 Home Economics Education

☐ 10 Industrial Arts Education
☐ 16 Technical Education
☐ 17 Trade and Industrial Education
☐ 22 Cooperative Education
☐ Career Education
☒ Other (Specify) New Basics

8. Education Level:

☐ Pre-K Thru 6 ☒ 7-8 ☒ 9-10 ☒ 11-12
☒ Post-Secondary ☒ Adult ☒ Teacher (Pre-service)
☐ Administrator (Pre-Service) ☐ Other (Specify)

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17 Person Completing this Abstract Cheryl Presley

Full Address

Dept. Educational Psychology

Southern Illinois University

Carbondale, IL

Zip 62901

This executive summary synthesizes major points set forth in a paper for the National Center for Vocational Education which presented a model for a pretechnical curriculum with special emphasis on human factors in the workplace, suggestions for vocational education's role in preparing students, and means for implementation.

Illinois State Board of Education

Department of Adult, Vocational and Technical Education Research and Development Section

Product Abstract

1 Title of material "STRATEGIES FOR PROBLEM SOLVING"

2 Date material was completed June, 1985

3 Please check one: New material ☒ Revised material ☐ Field-tested material ☐

4 Originating agency SOUTHERN ILLINOIS UNIVERSITY
Address Dept. Educational Psychology Zip Code 62901

5 Name(s) of developer(s) Joe Karmos and Ann Karmos
Address same as above Zip Code

6 Developed pursuant to Contract Number R31-24D-036

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17 Person Completing this Abstract Cheryl Presley

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Carbondale, IL

Zip 62901

This paper summarizes and reviews current research and practices in problem solving. Suggestions for implementation and utilization of a model presented by the project incorporates strategies, methods and examples for systematically integrating problem solving into curriculum content.

Illinois State Board of Education

Department of Adult, Vocational and Technical Education Research and Development Section

Product Abstract

1. Title of material "TASK LIST OF CHANGE SKILLS"

2. Date material was completed May, 1985

3. Please check one: New material ☒ Revised material ☐ Field-tested material ☐

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Address Dept. Educational Psychology Zip Code 62901

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This task list is a synthesis of CBE and project efforts to incorporate change skills instruction into vocational education curricula. This list is not a public domain article, but may be disseminated to interested State Board of Vocational Education personnel.

Major Dissemination Activity Summary:

Basically four dissemination goals were identified and fulfilled by project personnel.

- a) Presentations of the conceptual model were made to the Illinois Vocational Association, JET training course, Plainfield High School, Illinois Association of Counseling and Development, the Administrative council of the Department of Adult Vocational and Technical Education, the Mt. Vernon Conference, the Association for Teacher Education, CBE site directors, National Center for Research in Vocational Education, and the ICTM conference. The purpose of each of these presentations was to a) inform and increase awareness of the outcome of the project (the conceptual model), b) to increase understanding and practical application of how to utilize and implement the model, and c) to solicit feedback and reactions regarding the model itself. These presentations were made at state, national, and local meetings in the form of workshops and/or didactic presentations. The audiences were educators, administrators, counselors, and other personnel interested and invested in vocational education. Presentations were made on the average of once or twice a month for the entire fiscal year. The presentators were Dr. Joseph Karmos, Professor, Dr. Harry Daniels, Associate Professor, and Cheryl Presley, Researcher III, Department of Educational Psychology, Southern Illinois University, Carbondale.
- b) Copies of the reports "Basic Skills for Work and Living: A model for Self-Empowerment" authored by Joseph Karmos, Cheryl Presley, Harry Daniels, and Ann Karmos and "Toward a Pretechnical Curriculum" by Harry Daniels, Joe Karmos, and Cheryl Presley were sent to selected individuals throughout the state as well as to the National Center for Research in Vocational Education and

Threshold magazine for the purpose of having them read, review, and respond to the contents of the papers. Dr. Joe Karmos, Professor, Dr. Harry Daniels, Associate Professor, and Cheryl Presley, Researcher, are in the Department of Educational Psychology. Dr. Ann Karmos, Associate Professor, is in the Curriculum Instruction and Media Department, Southern Illinois University, Carbondale. Copies of the executive summary of the paper "Toward a Pretechnical Curriculum" were sent to the advisory committee, CBE site personnel, and others in order to solicit feedback regarding contents of the paper. This paper was awarded a prize by the National Center for Research in Vocational Education and was also presented in Washington, D.C. The authors of this paper are Dr. Joseph Karmos, Professor, Dept. of Educational Psychology, Dr. Harry Daniels, Associate Professor, Dept. of Educational Psychology, and Cheryl Presley, Researcher, Dept. of Educational Psychology.

- c) In order to provide and disseminate information and strategies for change skill instruction to CBE site personnel, two meetings were held. The first was at the Lake County Vocational Center and was to familiarize staff with constructs and strategies of our project. The two day long meeting was held at Giant City State Park, Carbondale, was to jointly construct task lists for project identified categories.
- d) Copies of the final report were sent to ISBE/DAVTE to fulfill requirements for project activities. Author is Cheryl Presley, Researcher, Department of Educational Psychology, Southern Illinois University, Carbondale.

Staff Development:

The staff development activities for the project staff consisted of participation in several meetings, professional conferences and workshops. Among the workshops and conferences were:

TET Training Course
Carbondale, Illinois

IVA Convention
Springfield, Illinois

ICTM Meeting
Normal, Illinois

CBE and Project Meeting
Carbondale, Illinois

National Center for
Research in Vocational
Education
Washington, D.C.

ISBVE Conference
Chicago, Illinois

Mt. Vernon Education Conference
Mt. Vernon, Illinois

Illinois Vocational Association
Triton College
Chicago, Illinois

Illinois Association of Counseling
Development
Houston, Texas

Association of Teacher Education
Las Vegas, Nevada

IVA/DAVTE Conference
Harper College
Chicago, Illinois

CBE Site Directors Workshop
Lake County Vocational Center

Meetings with various professionals in designated fields were attended by
all or some of the project staff:

DAVTE Project Directors Conference
Sangamon State University
Springfield, Illinois

Jim Greenan
Project Director
Champaign, Illinois

Deans, College of Education
and Technical Careers
Southern Illinois University
Carbondale, Illinois

Gordon Dveirin
Broomfield, Colorado

In addition, weekly meetings were held and attended by the project staff
in order to share problems, concerns, and progress.

Publicity:

The staff was photographed and interviewed for Newsletter for Vocational
Educators, a paper which disseminates information about research at the University.
Additionally, the project received other direct and indirect publicity through
presentations at professional workshops, presentations at national and state
meetings and conferences.

Problems:

Three initial concerns to the project were:

- a) Due to the Regionalization efforts on the part of the state our original intended objective of providing technical assistance to the ETE sites (Objective IV) was postponed indefinitely. It is perceived by the staff, our advisory board, and educators that we have made contact with, that Regionalization and the current Vocational Education needs would best be served by our focusing attention on creating more specific utilizeable materials which may be integrated into future curriculum.
- b) Expansion of the theoretical constructs of the proposed model to appropriate practical orientations continually calls for clarification and balance on the part of our staff as to our roles as possible curriculum creators, idea disseminators, or trainers. So far, the advisory committee has served as agents of clarification and practical help as to the most efficacious method of dissemination of our ideas. It must be kept in mind by our staff that change does not occur quickly.
- c) Finally, it became evident that development of a questionnaire for assessment of vocational educators use of identified change skills was inappropriate to the needs and attainment of objectives of the grant at this particular time. The advisory committee, DAVTE sight directors, project administrators and staff felt efforts would be more appropriately utilized in expansion, construction, refinement, and dissemination of the conceptual model. It was felt that identification and development of programs and strategies which teach these change skills to key state personnel as well as teachers and administrators was essential to the ultimate impact of the grant on vocational education. This resulted in a shift of project staff duties and in implementation of research as well as the

abandonment of Objective 4 in the original policy proposal.

Statement of Impact:

Change is central to American life. More than a century ago, de Tocqueville remarked that "the American has no time to tie himself to anything, he grows accustomed only to change and ends by regarding it as a natural state of man." (1938) This social commentary about nineteenth century America seems remarkably apt as our nation approaches the 21st century. Contemporary theorists (Schlossberg, 1980; Moos & Tsu, 1979; Schneider, 1984; Levinson, 1978; Bridges, 1983; Gould, 1978) have noted that the average American adults are encountering an increasing number of changes during their lifespans which call for new patterns of behavior or for revisions in their perceptions of self and environment. Significantly, more than half of these changes are career related (Brammer & Abrego, 1979).

Even though our predecessors have always accepted and adapted to change, they have usually had relatively stable lifestyles. Contemporary Americans, however, are living in the midst of a technological revolution for which the rate of change is accelerating. They will have to be more flexible, more versatile, and more adaptable with respect to planning and actualizing their respective careers and lives (Pratzner 1978; Naisbitt, 1982).

Education will be called upon to play a central role in educating students who can adaptively respond to the changes that the future holds. Parents will expect schools to provide the skills and strategies that their children will need to survive and prosper with ever increasing social and technological change as they enter the world of work. In the monograph Adaption to Work (Ashley, 1980) from the National Center for Research in

Vocational Education, it was noted that an inability of many workers in the American labor force was that of adapting to the changes, demands, and responsibilities of work. Business and industry will look to the schools to produce workers who possess and manage skills which contribute to the achievement of employers' goals. Education has no alternative but to respond to this emerging imperative because society will surely hold public schools accountable for accomplishing this important task.

How should the educational community respond to these clear, urgent and pressing demands? Alternative solutions have been proposed by a number of sources (Adler, 1982; Botkin, Kimanancescu & Statu, 1982; Boyer, 1983; DeBevoise, 1982; Goodlad, 1982; Gisi & Forbes, 1982; Naisbitt, 1982; Pratzner, 1978; Ravitch, 1983; Selz, 1980; Timpane, 1982). Based on a review of these and other resources, our own research, interviews and workshops, we have identified a comprehensive model for assisting in the preparation of students to adapt with change. The model (Figure 1) displays three classes of skill competencies within which instructional strategies and pretechnical curriculum decisions may be developed. The series of assumptions which represent the foundation of the model are outlined below.

ASSUMPTION 1: The nature of work in the future will be characterized by constant change, which means that most workers will be employed in several different jobs within or across occupations during their lifetime. Accelerated change represents a significant factor which must be considered by individuals as they prepare for their initial employment.

ASSUMPTION 2: Individuals' employability alternative in the future will be shaped by the acquisition and maintenance of specific classes of skills.

Three classes of skills can be identified: generalizable skills, problem solving skills, and transition skills

DEFINITION: Generalizable skills refer to those skills which are actively used in work performance, which are transferable across jobs and occupations and which are instrumental to success on the job and in the classroom. Examples include mathematical, reasoning, communication (written and oral), interpersonal and attitudinal skills.

DEFINITION: Transition skills refer to those skills which are used to manage life transitions, especially occupationally related ones. They include managing changes in the environment, in relationships, and in oneself; managing stress, loss and grief; and making decisions.

DEFINITION: Problem solving skills refer to those skills which are employed in the resolution of problematic situations including interpersonal problems (group and individual), information related problems, and problems related to the understanding of human behavior.

ASSUMPTION 3: These three classes of skills are thought to represent resources that are potentially available to all individuals, albeit to different degrees for different individuals at different times in different occupational settings.

COROLLARY A: Each of the three classes of skills is instrumental to any individual's capacity to achieve and maintain a status of high employability in the future.

COROLLARY B: The relative importance of any of the classes of skills in comparison with the others for any individual varies across time and context.

ASSUMPTION 4: Individuals organize the classes of skills into structures that optimize their probability of achieving and maintaining a status of high employability in the future. These organizations create relationships among the classes of skills that are both flexible and variant.

COROLLARY A: Each of the three classes of skills makes a unique contribution to individuals' skill capacity, but the relationships among the classes of skills also makes a significant contribution to that capacity.

COROLLARY B: The organization of the classes of skills and their subsequent interrelationships for any individual varies across time and context.

ASSUMPTION 5: Individuals modify the organization of the classes of skills (and their subsequent interrelationships) in order to accommodate changes that occur in their environment, in themselves, or in their relationships.

COROLLARY A: Modification of the organizational structure of the three classes of skills involves disrupting the existing structure and recombining the classes of skills into an alternative structure. Modifications may be initiated by either proactive or reactive responses to change.

COROLLARY B: Successful reorganization of the three classes of skills maximizes the probability of individuals' maintenance of their high employability status.

ASSUMPTION 6: Individuals' identity is considered as the composite of previous, current and potential organizations of the three classes of skills, as well as their response to the resultant interrelationships of those organizations.

ASSUMPTION 7: Individuals who possess the capability to appropriately utilize all three classes of skills may be said to be adaptable and, thereby,

more likely to manage transitions which exist in both their lives and in the world of work.

ASSUMPTION 8: Education has the potential to help students acquire the three classes of skills and to teach them how to manage these resources in order to enhance their long term employability and social satisfaction.

COROLLARY A: This potential may be realized by incorporating the three classes of skills into a prescribed pretechnical curricula that is an integral part of students' education.

COROLLARY B: This potential may be realized by providing instruction which emphasizes the processes used in the resolution of problems and the management of transitions as well as the content of the problems or transitions.

ASSUMPTION 9: This model represents a new paradigm for examining the relationship between education, technology and employability. It has as its focus the dynamic process (adapting with change) that will be an essential element of individuals' future linkages of education with technology, a process that they must master if they are to achieve and maintain a status of high employability.

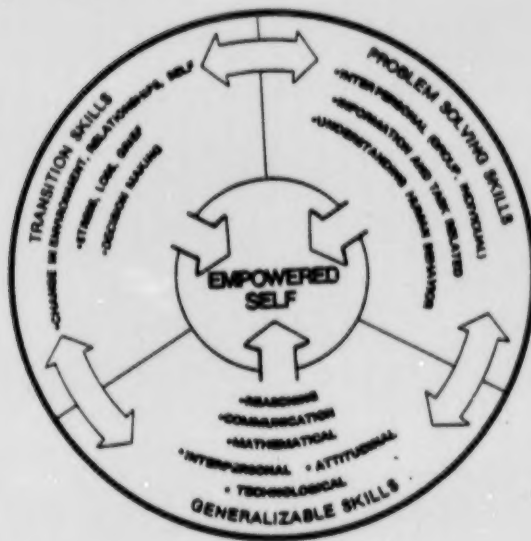
The importance of the skills identified in our model has been identified by others who have developed and implemented curricula which address particular skills. Examples include a manual by Brammer and Abrego (1981) which outlines workshops for helping people to deal with career-related changes; Bridges' (1983) excellent book entitled Transitions, which helps adults cope with changes in their lives; outstanding curriculum materials for teaching problem solving developed by the Edward deBono School of Thinking and by the Institute for the Advancement of Philosophy for Children in Upper Montclair, New Jersey.

Curricula for generalizable skills has been produced by the State of Arizona and by the Center for Occupational Research and Development in Waco, Texas.

Our efforts to develop a model for including change skills within vocational have been successful. Initial responses to our work indicate that the model has heuristic value for vocational educators and administrators and that the strategies and procedures which have been identified to date may be appropriate for vocational classes. Given this initial acceptance of our work by a limited number of professionals, it is now important to present the products to a larger sample of potential users and, after recording their responses, make the necessary modifications in either the model or the strategies and procedures. It is by this means that we hope to insture the likelihood that the products will be adopted and used by vocational educators. This project will provide vocational teachers and administrators as well as interested others with: (a) a set of educational strategies and procedures that may be implemented within the curriculum to prepare students to adapt with change, (b) documentation of the need for the inclusion of these strategies and procedures, (c) policy proposals that may be utilized to integrate these strategies and procedures with existing curriculum, and (d) evidence of how this project relates to other efforts to improve vocational education instruction, including the CBVE. These four outcomes build on the traditional set of skills responsibility for the management and direction of their careers.

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SKILLS FOR ADAPTING WITH CHANGE



Conclusions and Recommendations:

The conclusions of this study are based on the data presented for each of the objectives and include:

1. Presently students are not good problem solvers in both the interpersonal and the work arena. The worker of tomorrow, more than ever, will need to possess problem solving skills. Literature reveals that problem solving is listed by employers as an essential skill of the future.
2. The nature of work in the future will be characterized by constant change which means that workers will be employed in several different jobs within or across occupations during their lifetime. It is projected that the average worker will be retrained 7 to 11 times during their work span. Accelerated change represents a significant factor which must be considered by individuals as they study their employability options and prepare for their initial employment.
3. The three classes of skills represent resources that are potentially available to all individuals, although in different degrees for different individuals at different occupational settings. Currently, some of these skills are being taught indirectly, however, it is seen that direct teaching of the change skills will maximize the individuals ability to proactively respond to change.
4. The change skills: Problem Solving and Transition Skills intersect with every subject matter and vocational education class. These skills typically have never been taught (Transitions) or only taught within specific content areas (Problem Solving - math, science, etc.). These skills can, and should, be taught in specific subject matter classes, but a general framework is needed which is utilizable across subjects and situations.
5. Vocational educators presently do not work closely with subject-matter teachers to insure appropriate and meaningful instruction of Problem Solving and Trans-

ition Skills. It is proposed that these skills may be taught as early as the seventh grade. It is vocational educators who have the technical know-how to lead the way in this endeavor.

Based on research findings and conclusions of this study, several recommendations can be made for practice and future research. The recommendations include:

1. For students to hold jobs, be retrained and adapt to a constantly accelerating rate of change in their lives, education must aid students in the preparation for the role of problem solvers. The effort must be undertaken to design a curricula for problem solving that would have cross-disciplinary applicability. Karmos, Daniels, Presley (1984) have developed a general model which may be the beginning.
2. These employability options both for the future and initial employment will be shaped by the aquisition and maintenance of three specific classes of skills. Three classes that have been identified are: Generalizable Skills, Problem Solving Skills, and Transition Skills.

Generalizable Skills refer to those skills which are actively used in work performance, which are transferable across jobs and occupations and which are instrumental to success on the job and in the classroom. Examples include mathematical, reasoning, communication (written and oral), interpersonal, and attitudinal skills.

Problem Solving Skills refer to those skills which are employed in the resolution of problematic situations including interpersonal problems (group and individual), information-related problems, and problem related to the understanding of human behavior.

Transition Skills refer to those skills which are used to manage life transitions, especially occupationally related ones. They include managing changes

in the environment, in relationships, and in oneself; managing stress, loss and grief; and making decisions.

3. Educational systems will be called upon to play a central role in educating students who can adaptively respond to changes that the future holds. Business and industry will look to the schools to produce workers who possess and manage skills which contribute to achievement of employers' goals. Education has no alternative but to respond to this demand. Education needs a comprehensive model for preparing students to adapt to change. Daniels, Karmos, Presley, (1984), have developed a model which may be a beginning.
4. All high school teachers could be trained to utilize the general model for problem solving and transition skills. The problem solving would include interpersonal and group problem solving as well as technical. Because of the many transitions students will face both in their school and work lives teachers should also be trained to teach transition skills.
5. The most important role for vocational educators relative to teaching generalizable problem solving and transition skills is through simulations. Vocational educators can develop simulations which reflect work related problems and transitions. It is seen that these simulations would span across many subject areas and substantially involve generalizable skills (reading comprehension, understanding graphs and tables, etc.) and would be a rich domain for the students to experience problems and transitions which potentially occur in an individuals work life.



ILLINOIS VOCATIONAL ASSOCIATION

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April 3, 1985

Joe Karmos
Dept. of Educational Psychology
Southern Illinois University
Carbondale, Illinois 62901

Dear Joe,

On behalf of the Illinois Vocational Association I want to thank you for your presentation at the IVA/DAVTE Workshop on March 22, 1985 at the Harper College, Palatine, Illinois. We really appreciated your time and effort.

Enclosed is a copy of the total evaluation from the Workshop. As you can see the sessions were rated very well. If you have any suggestions for future in-service activities we would appreciate your comments.

Also enclosed is your reimbursement check for expenses, and a copy of the IVA voucher for your records. If you have any questions, please let me know.

Once again thank you for your cooperation.

Sincerely,

Joy Janssen
Joy Janssen
Executive Director

*P.S. Please have
Cheryl fill out
the enclosed
voucher!*

TECHNOLOGICAL CHANGES AND HUMAN STRAINS

Total No. of Evaluations - 39

Teaching areas - Ind. Ed. - 4 Home Ec. - 16 Ag. - 2 Business - 7

Primary job - Teacher - 30 Coordinator or Director - 3 Administrator - 4
Counselor - 2

1. How was your seminar linked to business and industry?

Learning how to use models for problem solving in change and transitions; needed more discussions on impact of modern tech.; related humanness to demands of technology and changes; info provided to help students develop personal skills; related to business and industry in that skills needed to be successful in the world of work; very much; how we can help our students adapt to changes after they leave school; problem solving, skill development; in problem solving as applied to life; personal relationship are as important as skill; teachers need all the tools they can get to help our students prepare for the world of work; problem solving is involved in all walks of life; in problem solving; all students will need a system of dealing with problems in every job; very definitely; how to deal with people in abnormal situations; a method of preparing students who through trauma or problems are not readying themselves for business and industry; problem solving techniques that students should be introduced to; related to what kind of employees business and industry want; skills employers are looking for in the people they hire; how to deal with people; how to prepare your students to cope with life on a personal level and how it would affect your job; need to prepare students with manipulative skills, reasoning skills, problem solving skills; a model which can be utilized in education to prepare people to enter business and industry; how to prepare students for change in the future business and working world; certain skills students need to face jobs in business and industry; ___; by showing students how to cope with change; employers seek workers who possess problem solving and interpersonal skills; show how people could get along and work out problems using group problem solving; linked to management problem solving solutions needed in all aspects; making use of problem solving skills; we discussed methods of interpersonal and group problem solving and the need for transition training; arm students so they can take care of themselves when they leave high school; help to educate students concerning stress with change; problem solving interpersonal relationships; the importance of interpersonal skills as being important for maintaining a job; yes.

2. Were the procedures for and need to link your program to business and industry covered in the seminar?

Yes; yes; yes; it should help myself and the students; yes; industry uses problem solving daily so we must develop students that are comfortable with the method; yes; yes; yes; yes; yes; thinking skills have got to be the most important due to the changes; yes; some; yes; yes; yes; yes; ___; ___; indirectly yes; yes; I feel the title was misleading; yes; yes; yes; yes; any program could be helped if the group problem solving model were used; no; it showed me a way that I can help my students; yes; yes; yes; help students solve their problems and cope with changes; yes; yes; yes; yes.

3. Will your job behavior be affected because of the content covered in the seminar?

Yes; yes; inspires me to do better and use more resources; yes; we use many of the techniques already; yes; somewhat; yes; yes; have been using this method to some extent already; I hope so; I use the problem solving already; yes; some yes; it will enable me to deal with students from a different view; yes; yes; yes; probably to some extent; yes; probably not; a little; will continue; I hope so; some; to some degree; slowly but surely; I will attempt to; I hope to; I hope to; yes; yes; yes; yes.

4. Will the content of the seminar be implemented into your program?
 ___;Yes;yes;yes;much of this content I am already using;yes; as much as possible;
 ___;yes;yes;yes;I already have students involved in decision making and
 problem solving; ___;yes;some of it already is;yes; ___;yes; ___;reinforced
 some of the ideas I already had;unfortunately it would not be allowed but
 it should be;is already used;yes;yes;yes; ___;hopefully;not overtly;already
 using some;yes;yes;yes;yes;yes;yes;yes; ___;.
5. Other comments
 Good program, presentors were well prepared and informative;good seminar;
 examples given were helpful; ___; ___; ___;problem solving is nothing new;
 has given me some new ideas, good seminar;the title was misleading not
 what I expected;interesting informative good job; ___;good seminar; ___;very
 good;presentors were knowledgeable;excellent job by presentors; ___;excellent;
 this was great;problem solving has been a part of my teaching methods; ___;
 I feel most teachers use this material already;excellent;good to show how
 some DAVTE money is used;very interesting; ___;a good session; ___;the 3rd
 speaker could have had a good program; ___;speakers did an excellent job
 of answering questions;good;good; ___;very informative; ___;based specifically
 on life skills the ability to problem solve.
6. What business and industry linked seminar(s) topics and methods of presentation
 would you recommend for next year?
 ___;would like to hear views of industry; ___;a follow-up seminar on this
 same area; ___; ___;tech. changes that we need to address in teaching skill
 subjects; ___;more seminars dealing with people; ___; ___; ___; ___;more computer
 related teaching aids; ___; ___;a Model-netics seminar; ___; ___;what direction
 our tech. society is going in and how do we prepare our students;staff developme
 self-esteem; ___; ___; ___;what we can do to employ students after graduation;
 lates comp. based VoEd projects and methods that work, traditional classroom
 tech that works;computers;busniess and industry rep on what they are doing
 in this area; ___; ___;more of same;more of same; ___;.

IVA/DAVTE WORKSHOP

March 22, 1985

Harper College, Palatine

	The Unfinished Agenda	VoEd Courses Can Count Toward High School Graduation	Education for Employment Delivery System	Working Hand-In-Hand With Your Guidance Counselor to Promote VoEd	Mainstreaming Special Needs Students Into VoEd	Incorporating the "Basics" Into Your VoEd Course	Today & Tomorrow's Occupational Needs	Using Computers in the Cooperative Education Classroom
1. How applicable to your needs?	4.60	3.69	3.44	4.71	4.83	3.5	2.87	3.5
2. How would you rate the presentor?	4.48	3.41	4.08	4.42	4.66	4.33	2.5	3.66
3. How appropriate to VoEd?	4.57	4.19	3.71	4.85	4.83	4.5	2.65	3.33
4. How much do you feel you learned?	3.78	3.69	2.94	4.28	4.66	3.5	2.65	2.83
5. Were handouts adequate & supportive?	2.68	2.55	2.35	4.57	4.83	3.5	3.62	3.83
6. Overall session rating?	4.21	3.64	3.17	3.85	4.83	3.66	2.5	3.19
# Evaluations Returned.	56	56	56	7	6	6	8	6

NOTE: 1 = low, 5 = high

Evaluation forms by Affiliate: IAVAT - 3; IBEA - 7; ICLA - 6; ICVECA - 4; ICDSA - 2; IHOA - 0; IIEA - 14;
IVHETA - 10; Non-Member - 9;

By Position: Teacher - 31; Coord. - 11; Counselor - 1; Admin. - 13; Other: Admin. Intern - 1
DAVTE Staff - 1

Evaluations Returned = 56

Pre-Registrations = 124

At Door = 34

Total Attendance = 158

Harper College Workshop
March 22, 1985

COMMENTS:

Unfinished Agenda: I had hoped to get a copy; nice to know somebody appreciates VoEd outside of VoEd; excellent job; need more copies; super; knows where schools are at & should be; he should present this speech to a much larger group of VoEd teachers. Many who needed to hear him were not here today; good; very dynamic; have heard better presentations; supported belief system; session was fine but it should have been directed at the people outside of VoEd who are very sheltered in their views and understanding of VoEd; very good presenter, liked it a lot; good speaker; great report but why isn't it passed to teachers; excellent speaker worthwhile information; copies available would have helped; Bd. of Educ. & State Leg. need to hear his presentation.

VoEd & H.S. Graduation: Gospel according to the State of Ill/Local School Boards; great questions & answers; too political; seemed ill at ease; very interesting; home ec. portion excellent; our school has a math class of this type; poor speaker, not very well prepared; good info helped to clarify some points; excellent presentation, valuable info; good but set in stone; it's time the Ill. State Board of Educ. get working with the Board of Higher Educ.; would like more emphasis on Bus. Math & English - how to go about getting admin. support; need follow up letter to verify, from school approval.

Delivery System: Nice; overall an excellent effort to inform on the regional delivery system. showed just how large a task looms ahead on the horizon in working with the rest of the teachers and administrators in the system; summation entirely too long, left no time for the overview; I believe we have some real problems with this system. The developers have done an adequate job outlining all the short comings, now we need some answers; quite good; good positive; home ec. session most helpful but short; graphics are too small; not enough handouts; no new information; ok; so-so; too much time in gen. session, not enough for questions & answers; presentation ok - if DAVTE is viewing this as a model program, some write-up would be appreciated.

Working Hand-in-Hand With Your Guidance Counselor to Promote VoEd: I believe we all realize the problems associated with this concept. We need some sound answers, or at least direction; super, very practical & many ideas to put to use.

Mainstreaming Special Needs Students Into VoEd: good choice of material; fantastic.

Incorporating the "Basics" Into Your VoEd Course: Didn't think the Basics "3rs" were talked about at all; too limited on time; very interesting and informative.

Today & Tomorrow's Occupational Needs: good;

Using Computers in the Cooperative Education Classroom: Expected more on instruction based computer use; I was looking for materials for coordinator's, information too limited; all 5 topics should be offered again.

or consulting, and offering various workshops designed to assist teachers with integrating economic and entrepreneurship concepts into their classroom. Also, the center is available to provide consulting services to the private business and industry sector to aid in economic development. All services are provided free of charge by the center.

The co-directors for the Southern Illinois Center for Economic and Entrepreneurship Education are Dr. Roger Luft (Vocational Education Studies) and Dr. James Leming (Curriculum, Instruction and Media). It is the desire of all associated with the center that both the educational and business sectors will take advantage of the services provided to strengthen economic and entrepreneurship development in Southern Illinois.

GM Joins STC in New Automotive Program

General Motors has announced the establishment of an Automotive Service Educational Program (ASEP) in the School of Technical Careers. ASEP is a two-year technical program designed to train highly competent automotive service specialists for GM dealerships. STC is the 25th site to be established in the nation.

Approximately 20 students will be chosen for the program, with all of them meeting the entrance requirements for SIU prior to "rigorous" testing, administered by GM, covering mechanical aptitude, space relations and math skills. After completing courses for one semester, the students will work full-time at regional GM dealerships to receive on-the-job experience, and then return to STC for the final phase of coursework. Upon completion of their associate degrees, students will work for GM at a dealership in the region, which covers the St. Louis Metropolitan area, Missouri, Kentucky, Tennessee and Indiana.

Rural Health Occupations and Linkage Project

Articulation in the health field has been one of the major thrusts of the Rural Health Occupation Project activities. The articulation activities, which initially stressed working agreements between college-based allied health programs in central and southern Illinois, have concentrated on collaborative efforts to aid southern Illinois students at the high school and community college level to make wise career decisions about health occupations education and employment. This has been and is presently being accomplished through:

- The Career Health Occupations Education aide-level guides that have been completed revised, and used at the high school level.
- The preparation and dissemination of the career guide, "Allied Health Training Programs in the Quad-State Area" for student/counselor use (2nd edition).
- The development and nurturing of the *Southern Illinois Community College Education Linkage* program.
- The development of a regional model for "Education for Employment" through the assistance and guidance of the Southern Vocational System.
- The implementation of a first-stage effort to expand the regional model to a multi-regional network approach.

During the present year, the linkage program which guarantees training positions in selected SIU/STC allied health and other programs, has increased from 14 to 30 students. Law enforcement and dental laboratory technology have been added to the existing programs participating in linkage activities—dental hygiene, respiratory therapy, and radiologic technology.

The linkage program has enhanced articulation between

the community colleges and SIU/STC by: a) providing a method that can prevent program duplication between institutions, b) providing a process in which students can have a smooth transition from community college to senior institutions and, c) expanding community college program offerings to include health occupations too costly for the community colleges to implement.

Strategies and Procedures for Introducing Change Skills into Vocational Education Being Developed

During the last three years a team of researchers in the Department of Educational Psychology has worked to identify the types of skills that individuals need if they are to be employable across their lifetime. This project has been funded by the Department of Adult, Vocational and Technical Education of the Illinois State Board of Education. The team, which consists of Drs. Harry Daniels and Joseph Karmos and Ms. Cheryl Presley, has identified three categories of skills that are needed for employment flexibility. They are: Generalizable Skills, Problem Solving Skills, and Transition Skills. Considered individually, each category of skills represents a collection of more specific skills that are considered important within the context of one or more vocational education programs or job clusters. Considered collectively, the categories of skills represent the complex of skills and knowledge which form the basis for self-empowerment. Self-empowered individuals are the ones who can adapt successfully to changes that will occur during their lifetime, many of which will influence, either directly or indirectly, their employment or job performance.

The implications of this research are far-reaching. Using a model which was developed to portray their ideas, the researchers have proposed a pretechnical curriculum for vocational education. This proposal will be published by the National Center for Research in Vocational Education in April 1985. The model has also been linked to the Competency Based Vocational Education Project in Illinois. The goal of this linkage is to have the identified complex of skills included among the core competencies of vocational education. In keeping with this goal, the project team is directing its efforts toward the identification of instructional materials and strategies that can be used to educate for self-empowerment. Current plans call for the field-testing of these materials and strategies in a comprehensive high school during the next academic year.

Workshop for Special Needs Students to be Held

On June 20 and June 21, Southern Illinois University-Carbondale will sponsor a two-day workshop to provide vocational educators with information and training to allow them to implement programs to meet the needs of all students regardless of their handicapping conditions.

Experts from a variety of fields will supply participants with facts related to learning disabled, recent legislation, information on the characteristics of the handicapped, methods for implementing programs to meet the needs of all students, community agencies servicing persons with handicaps, and resources available for classroom use.

Individuals for whom this workshop will be geared are: secondary and post-secondary vocational educators, special education teachers, special needs personnel, administrators, parents, and students.

For further information call:

Ms. Candy Duncan Evans
School of Technical Careers
(618) 536-6682, Ext. 234

APPENDICES

Basic Skills for Work and Living: A Model for Self-Empowerment*

By Joseph S. Karmos, Cheryl A. Presley, N. Harry Daniels and Ann R. Karmos

Basic skills are a reflection of Americans' work activities and values. For a long time, it has been relatively easy to revise basic skills as technology and society changed. But now changes are occurring so rapidly that predicting lifelong basic skill needs has become very difficult. In fact, change itself has become the only predictable certainty of the future. Already, the ability to deal with change is critical for many Americans. They are now confronting changes in their jobs, changes in their schooling, changes in their personal lives, and changes in the world around them. Contemporary education must provide opportunities for students to learn to be adaptive, and the skills to do so must be considered basic skills. This paper describes a model for preparing students to adapt and cope with change. Three classes of adaptive skills are described: Generalizable Skills, Problem Solving Skills, and Transitional Skills.

A Model for Adapting With Change

Change has always been central to American life. More than a century ago, de Tocqueville remarked that "the American has no time to tie himself to anything, he grows accustomed only to change and he ends by regarding it as a natural state of man" (Pierson, 1938). This social commentary about nineteenth century America seems remarkably apt as our nation approaches the 21st century. Contemporary theorists (Schlossberg, 1982, 1981; Moos & Tsu, 1979; Schneider, 1984; Levinson, 1978; Bridges, 1980; Gould, 1978) have noted that American adults are encountering an increasing number of changes during their lifespans which call for new patterns of behavior or for revisions in their perceptions of self and environment.

Educational systems will be called upon to play a central role in educating students who can adaptively respond to the changes that the future holds. Parents will expect schools to provide the skills and strategies that their children will need to survive and prosper with ever increasing social and technological change as they enter the world of work. In the monograph *Adaption to Work* (Ashley, 1980), from the National Center for Research in Vocational Education, it was noted that an inability of many workers in the American labor force was that of adapting to the changes,

demands, and responsibilities of work. Business and industry will look to the schools to produce workers who possess and manage skills which contribute to achievement of employers' goals. Education has no alternative but to respond to this emerging imperative because society will surely hold public schools accountable for accomplishing this important task.

How should the educational community respond to these clear, urgent, and pressing demands? Alternative solutions have been proposed from a variety of sources (Adler, 1982; Botkin, Dimancescu & Stata, 1982; Boyer, 1983; DeBevoise, 1982; Goodlad, 1982; Gisi & Forbes, 1982; Naisbitt, 1982; Pratzner, 1978; Ravitch, 1983; Sels, 1980; Timpane, 1982). Based on a review of these and other resources, our own research, interviews and workshops, we have identified a comprehensive model for pretechnical curricula for preparing students to adapt with change. The model has two basic assumptions:

ASSUMPTION: The nature of work in the future will be characterized by constant change, which means that most workers will be employed in several different jobs within or across occupations during their lifetimes. Accelerated change represents a significant factor which must be considered by individuals as they prepare for their initial employment.

ASSUMPTION: Individuals' employability options in the future will be shaped by the acquisition and maintenance of specific classes of skills. Three classes of such skills have been identified: Generalizable Skills, Problem Solving Skills, and Transition Skills.

*This study was supported in part by a funding agreement with the Department of Adult, Vocational and Technical Education of the Illinois State Board of Education. Opinions expressed in this article do not reflect, nor should they be construed as policy or opinion of the Illinois State Board of Education or its staff.

Joseph S. Karmos, Cheryl A. Presley, N. Harry Daniels and Ann R. Karmos are Professors of Education, Southern Illinois University, Carbondale.

The figure below displays three classes of skills within which instructional strategies and pretechnical curricula decisions may be developed.

SKILLS FOR ADAPTING WITH CHANGE



DEFINITION: Generalizable Skills refer to those skills which are actively used in work performance, which are transferable across jobs and occupations and which are instrumental to success on the job and in the classroom. Examples include mathematical, reasoning, communication (written and oral), interpersonal, and attitudinal skills.

DEFINITION: Transition Skills refer to those skills which are used to manage life transitions, especially occupationally related ones. They include managing changes in the environment, in relationships, and in one-self; managing stress, loss and grief; and making decisions.

DEFINITION: Problem Solving Skills refer to those skills which are employed in the resolution of problematic situations including interpersonal problems (group and individual), information and task-related problems, and problems related to the understanding of human behavior.

Two classes of skills from the model are discussed below: Transition Skills and Problem Solving Skills. Generalizable Skills have been described in detail in several current sources, one of which is Greenan's *Identification of Generalizable Skills in Secondary Vocational Programs* (1983). Generalizable Skills, including

the 3 R's of reading, writing and arithmetic, are crucial for adapting with change, but they are no longer a sufficient education for the workers of tomorrow. We have extended essential skills to include Transition Skills and Problem Solving Skills. They are the focus of the article. These skills will help provide tomorrow's worker the opportunity for life-long employability and well-being.

Handling Transitions

A transition has been described as an event or nonevent resulting in a change in relationships, routines, assumptions, or roles within the setting of self, work, family, school, health, or finances (Schlossberg, 1984). Adolescents face many transitions: Becoming educated, choosing a career, finding first jobs, seeking individual identity. Passage from youth to young adulthood often involves decisions to marry, to drop out of school, to leave parents, and to have children. Throughout their life-spans, change and transition will continue--changes in values, purposes, and circumstances. As adults, some will lose or change jobs, experience retraining, become successful, encounter illness, divorce or be divorced, develop and change emotional and spiritual perspectives, and adjust to retirement and the challenges of old age. Each of these events will signal a transition in their lives, some inevitable and predictable, many not. Forecasts for the future signal the certainty of a far greater number of these life transitions for them than their predecessors ever dreamed of encountering.

The educational system must help prepare students to cope with these realities by utilizing education as an instrument of change through which they may have the resources and options with which to build and survive the future. Various programs have been developed to help individuals deal with the stress of transitions. They focus only on specific topics such as stress management, coping skills, burn-out, and anxiety reduction. A more comprehensive approach to handling transitions is needed as a framework for designing public school curriculum. A model is needed which (a) clarifies transitions, (b) accounts for the developmental issues students experience, (c) integrates the content and process of transitions, and (d) which can be integrated into existing educational programs. The model presented below is based on Nancy Schlossberg's (1984) *Counseling Adults in Transition*, on William Bridges' book, *Making Sense of Life's Changes* (1980), and on John Schneider's book, *Stress, Loss and Grief* (1984).

Model for Handling Transitions

I. IDENTIFY THE TRANSITION

What has ended (something personal, interpersonal, family, school, friends)?
What were some of the factors that made the changes occur (people, job, school, values)?
What is the impact on you?
What are your feelings about the transition?
Describe the transition as best as you can.

II. IDENTIFY COPING RESOURCES

What are your competencies? Your strengths?
Your weaknesses?

What do you know? What capabilities do you have that will help you?
 What personal skills are being used?
 What obstacles do you have to overcome in order to change (financial, psychological, interpersonal)?
 Who could provide a personal support network (emotional, physical, group, individual)?
 What are the major steps that help you solve problems in general? Think about a problem solving model.
 How might you benefit or not benefit from this transition?

III. IDENTIFY AND CHOOSE WAYS OF MANAGING THE TRANSITION

A. Examine various alternatives for coping

Maybe a problem has to be solved. Choose a problem solving model.
 Individual or group counseling is always a possibility.
 Do you need to learn new coping skills? Relaxation Skills (exercise program, time management, health care, etc.)?
 Examine the positive and negative consequences of all planned actions.

B. Take full advantage of the "Neutral Zone"

Find a regular time to be alone.
 Identify what you really want.
 Reexamine your values and your goals.
 What do you know about yourself from the past that you can use in managing the transition?

IV. TRIAL, INTEGRATION AND SELF TRANSFORMATION

As you try things out, who can you discuss them with?
 In what ways is this a positive experience? A negative one?
 How are you different?
 What did you learn from this experience?
 What did you learn about you?
 Is your grief or disappointment part of the healing process?
 What will you do if your plan for managing the transition does not work out well for you?
 Can you accept the transition and go on with your life?

The model is versatile. It is applicable to almost any kind of transition. The model may be used by students contemplating career or college choices, experiencing the loss of friendship, or dealing with the loss of a parent through death or divorce.

Two references (Schollberg, 1984; Abrego & Brammer, 1979) are useful for high school teachers. Both give excellent guidelines for helping students handle transitions. Educating students to deal with life transitions should be an important part of the high school curriculum. Some guidelines are: (1) students should become aware that life transitions are natural and inevitable and that they already have personal resources for dealing with them. (2) students should first examine and analyze transitions they are already experiencing. They should become aware of their values, interpersonal skills, competencies, and other personal resources which

strengthen their ability to cope with change. (3) Students should perceive instruction as relevant to their present lives so that a meaningful extension can be made to typical anticipated and unanticipated transitions later in life. (4) Students should become aware of future anticipated transitions such as graduation, leaving home, etc., and future unanticipated transitions such as not being accepted for college, losing a job, the death of a spouse, etc. (5) Throughout the study of transitions, the Model for Handling Transitions should be applied and it should be viewed as a problem solving strategy.

With change and transition as the rule rather than the exception it becomes evident that one of the more pressing concerns before educators today is the empowerment of students to identify, adapt, and manage transitions which occur developmentally, socially, and occupationally in their life courses. Changing times will bring more self-responsibility and more self help. Maurice Gibbons (1984) noted that "...institutional care and support services are diminishing, and people can expect to take more responsibility for themselves throughout their lifetimes. Self-help is replacing institutional help." The management of change and transition must become a part of the learning life of the individual. This model for educating for transition is a beginning.

Solving Problems

Problem solving is receiving more national attention now than ever before. Daniels and

Except for the three R's, problem solving was listed most frequently in the literature and by employers as a essential skills for dealing with the future.

Karmos (1983) found that except for the three R's, problem solving was listed most frequently in the literature and by employers as an essential skill for dealing with the future. Michael Timpane in his report of corporations and public education emphasized the need for teaching young people problem solving skills so they will be ready for further education and training (Timpane, 1982).

Not enough problem solving is occurring in classrooms. In the April, 1983 Kappan, John Goodlad remarked that "teacher talk" was by far the dominant classroom activity. "Teachers rarely encouraged student-to-student dialogue or provided opportunities for students to work collaboratively in small groups or to plan, set goals, determine alternative ways of achieving these goals, and the like. The emphasis was on recall not on problem solving or inquiry." Goodlad went on to say that each of the 50 states believes in problem-solving instruction but very few are doing much with it.

Something is being done about problem solving by business and industry. General Motors is currently training approximately 50 percent of its employees in problem solving skills. Kathy Long, Director of Research and Development for GM, said in a personal interview (1983) that the training has been successful, that productivity and positive attitudes have both increased, and that General

Motors is going to devote more time and money to problem solving training. The training has improved worker competency, enabled workers to diagnose and solve job related problems, taught them to examine their own behavior and consequences of it, and has helped workers to be more cooperative with each other in solving problems (Guest, 1979). The Center for Public Resources in its report Basic Skills in the United States Work Force (1982) identified corporations and schools which are currently involved in problem solving training.

Roy Forbes, Director of the Assessment and Evaluation Division for the Education Commission of the States, predicted that by 1990 between 900,000 and 2 million high school graduates will not possess the problem solving skills required for employment in a highly technological society (Whimbey & Lochhead, 1984). For students to hold jobs, be retrained, and in general to adapt to a constantly accelerating rate of change in their lives, they will need strategies for how to attack and solve problems.

Possession of at least one general model for solving problems is essential strategy. There are many different models, but the one we have developed is given below. It is based on the group problem solving model from General Motors (Kolb & Baker, 1980), from G. Polya's book How to Solve It (1957), and from Thomas Gordon's book Teacher Effectiveness Training (1974). There are five steps to the model.

Model for Problem Solving

1. UNDERSTAND THE PROBLEM

What are the essential data?
Is there enough information to solve the problem?
Would a figure or sketch help? Maybe introduce symbols or other variables.
Separate the problem into manageable parts, if needed. Write down each part.
Can the problem be restated in a different way to help understand it?

2. BRAINSTORM FOR POSSIBLE SOLUTION STRATEGIES

Generate a lot of ideas. Don't judge them, just write them down.
Has a problem like it been solved before?
Would working a related problem be useful?
If there were some particular additional information, could the problem be solved?
Where could the information be obtained?

3. CHOOSE A TENTATIVE SOLUTION STRATEGY

Remember, the strategy may not work and the process may have to be started over.
For "people" problems, ~~possibilities~~ associated with carrying out tentative strategies must be carefully weighed.
Also, if people are working out an interpersonal problem, then the tentative strategy will likely be a compromise. No one is likely to get everything they want.

4. CARRY OUT THE TENTATIVE SOLUTION STRATEGY

Check each step as the plan is carried out.
Check that each step is OK. Is each step correct or valid?

Are there probably places for errors, mistakes, or faulty reasoning? Where are they?

Would it be useful to have someone else go over your steps?

For implementing solutions to "people" problems, decide "Who does What, When." Maybe write it down.

5. LEARN

Check the result if possible. Is the judgment sound? Does it have a reasonable chance of solving the problem?
What are the implications or consequences of the solution?

Could the problem be worked out another way? Perhaps look at other people's solutions and hear what they have to say.

If appropriate, evaluate the effectiveness of the solution.

Have enough problems like this one been worked to begin to generalize to a plan for solving similar problems?

Does this solved problem open up new relationships that hadn't been thought of before? Think about it!

At the beginning, we have our students follow the Five Step Model, step by step. Later on they are encouraged to freely use their own creativity and intuition to solve problems since no single model is directly applicable to all problems.

Commercial programs for teaching problem solving exist. The June 1983 issue of the Eppan listed more than 30 programs, video-taped presentations, computer assisted instruction, instructional programs for teachers, and materials for student use.

Problem solving is a difficult subject to teach. But there are some essential guidelines: (1) students must be given substantive problems to solve and actively pursue their solutions. People learn by doing. And their "doing" must have substance. There is no merit in teachers being superb at teaching trivia. (2) Students are to be armed with models and strategies for solving problems. Breaking problems into simple parts, making sketches, reading carefully, etc., are all necessary strategies for good problem solving. (3) Knowledge in specific content areas is necessary for solving problems in that area. One can't solve many problems in mathematics if one doesn't know much math. The best problem solvers have a very broad base of specific and general knowledge. (4) Some problems are more appropriately solved in a group setting and others in an individual setting. The group setting needs to be used more so students can better learn the give and take of cooperation that is now so vital to business and industry. (5) Students need to become more self-reflective of themselves as problem solvers. "What kinds of problems do I have difficulty with?" "What are my strengths, weaknesses?" "Where do I need to improve?" "What can I learn from that mistake?" "How do I learn best--hearing, seeing, touching, imagining?" "Where do I go for help?" Students can always become better problem solvers, and educators can always improve materials and instruction for helping it happen.

SUMMARY

The future is where today's students will spend the rest of their lives. It is essential that educators do the best job they can in forecasting an adequate preparation for it. Five major assumptions in this preparation for the future are: (1) people will have to process more information and data than ever before, (2) human relationships will increasingly be strained as change accelerates, (3) to cope effectively with this acceleration, people will have to respond faster and faster to the increased tempo, (4) people as individuals will need to progressively take more responsibility for their own growth and well being, and (5) self-empowerment is the key assumption for guiding schools in preparing young people for their futures.

A new balance must be struck between the impact of technology and change and the people who are affected by it. It is ultimately the individual who must apply the new techniques in the workplace. A machine, a process, a system is no more effective than the people using it. People must not become slaves of technology and change. The Human Factor in education and work must stand above all others.

We want to help people cope. After three years of talking to educators, business people, teachers, students, and unemployment victims, we have settled on three categories of essential skills for helping people cope: Generalizable Skills, Problem Solving Skills, and Skills for Handling Transitions. People will use these skills in their daily lives, on their jobs, in their classrooms, during crisis, and during personal growth. There is self-empowerment in these skills: People can help themselves to lead more meaningful, balanced, and productive lives.

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Needs of Secondary Vocational Programs in Teaching Generalizable Mathematics Skills

By James Greenan and Jo Powell

The American school system has long operated on the assumption that the 'Three R's' were basic skills required by a burgeoning industrial society. The importance of basic skills, especially reading, writing and mathematics, has been a renewed focal point of educational discussions for the past several years. The seeming decline of the acquisition of basic skills through the formal educational system, the turmoil in the job market as a result of the influx of high technology and the obsolescence of certain skills, and the complexity of the demands has thrust basic skills into the public arena (Lotto, 1983). This concern has been further reinforced by Federal legislation with the Basic Skills Improvement Act of 1978.

However, basic skills have significance not only for educators, but also for employers (Ashley, Laitman-Ashley & Faddis, 1979; Brickell & Paul, 1978; Faddis, Duckles, Woditsch & Brower, 1980; Johnson, 1981; Wiant, 1977). Perhaps flexibility will be one of the most important characteristics of the new American worker to meet the new industrial challenge. More so than specific vocational skills, the basic skills are readily transferable between jobs and occupational classifications (Cunningham, 1971; Kuvala & Smith, 1975; Marquardt & McCormick, 1972; Meehan &

McCormick, 1969; Short, Dotts, Short & Bradley, 1974; Smith, 1975; Smith, 1977). The research on basic skills and occupations suggest that basic skills are critical to employability to a broad range of occupations and jobs (Pratzner, 1978, 1981; Stump, 1978). This transferability is especially important because of the several occupational changes an average person makes in one's lifetime.

More recently, the idea of basic skills, transferable skills, and the skills and abilities needed for success in vocational programs and occupations have been conceptualized in terms of generalizable skills. The concept of generalizable skills is commonly concerned with the transferability of cognitive, affective, or psychomotor skills which are necessary for success across vocational programs and occupations (Greenan & Smith, 1981; Greenan, 1983). Frequently, proficiency in cognitive and affective skills may be prerequisite to proficiency in vocational psychomotor skills. Thus, the concept of generalizable skills can be viewed as a procedure for identifying those skills and abilities necessary for success in vocational/technical programs and occupations.

Generalizable skills have significance, therefore, for vocational education programs. However, students in vocational programs have been less proficient in the basic skill areas than 'academic' students, typically scoring about one standard deviation lower (Lotto, 1983). Lotto notes,

The dilemma for vocational educators is how to maximize the basic skill proficiencies of vocational students within the structure and resources of an occupational curriculum.

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Counseling for Tomorrow: The Challenge of Change

Cheryl A. Presley

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Counseling for Tomorrow: The Challenge of Change

Over twenty years ago poet balladeer Bob Dylan prophetically sang "The times they are a changin'." Never before has it been more true. The individual today lives in a world where technology insures continued and accelerated change in the nature of available jobs. Workers will lose or change jobs, experience retraining, obsolescence, and have multiple careers. The U.S. economic structure is changing as the advent of micro-electronics and information processing creates a global village where international trade will further influence the occupational structure of the work force (Brown & Prichard, 1983).

The major changes in the socioeconomic structure of society will, in turn, create a myriad of transitions and change within our social institutions. Traditional roles of men and women are rapidly being transformed as alternative family structures become more prevalent as evidenced by a move toward role equity, extended families, one parent households, blended families, and more women entering the workforce. Occupational and life style transitions will be experienced by many individuals who lack the skills to cope with change. Never before has the interface between technology, change, and the individuals who use technology been more important if our society is to prosper. A balance must be struck between the impact of technology, change, and the human beings who are affected by it (Subcommittee on Science, Research, and Technology, 1982). As a result, there is renewed interest in extended networking, an increased need for intimacy and close interpersonal relationships, wholistic health practices, spiritual and transpersonal development, cultural pluralism and global interdependence (Arrendondo & Benjamin, 1984).

In a world where technological and occupationally related transitions interact with and are intensified by changes in societal norms and trends, developing the human side of society may be the single most pressing task before counselors. Development of individuals for living productively and harmoniously in a technologically and socially complex world becomes the challenge. For the individual to become a fully functioning member of the community of tomorrow, to become self-empowered, and maintain a balance between technology, change and the self, individuals must develop the skills and competencies to deal with change and transitions which occur in the various settings in which they find themselves. It is to that task we must now turn, for unless a time of transition is seen in the context of the individual life journey, it is unlikely to have any meaning greater than "this has ended and this has started." It is to discover meaning that we ask the question why as we struggle to manage transitions that occur. Counselors cannot be expected to prepare individuals for all possible unknown future contingencies, but may instead utilize their skills to assist in the self-empowerment of individuals to adapt, cope and manage transitions with confidence, interrelatedness, compassion, and the ability to choose and make decisions which will enhance excellence in all aspects of life.

Change In Counselor Roles:

It has been proposed by the Satellite I Mission Workshop (Arrendondo & Benjamin, 1984) that the emerging social, educational, and technological trends will create a variety of work settings in which the counselor will provide services. Various work settings will most likely require increased and expanded sets of skills and roles within those settings. Possible work

settings for counselors include wholistic health centers, re-training centers, adult learning centers, prisons, military bases, senior citizens' residences, and university training programs. With the increased diversity of work settings and roles emergence and expansion of the skills of teaching, counseling, program development, life development, informational retrieval, networking and leadership will become more prominent (Arrendondo & Benjamin, 1984). It is apparent that in order to serve individuals in the future our professional identity, roles, skills, may also undergo changes for which our professional "crystal ball" has not yet provided a clear picture.

Managing Change:

The challenge of change seems overwhelming both for counseling as a profession and for the individuals counselors serve. Typically, it has been the responsibility of counselors to assist individuals to function in a changing world, to adapt, cope and manage the challenge of an uncertain future. Given the nature and amount of change individuals are to experience, it appears that it is time to introduce a comprehensive approach to the process of change and transition. One which a) organizes the knowledge and process necessary for maximizing an individual's ability to adapt and manage transitions across setting and context (personal, interpersonal, workplace, institutional, or community), b) identifies and passes on the skills necessary for the individual to cope, manage, and adapt to the challenge of an uncertain future, and c) has as its focus the self-empowerment of the individual.

Managing change depends upon the individual's ability to successfully acquire and mobilize the skills that will enable them to adapt with change. Presently there exist various programs which have been developed to deal with the stress of transitions, the management of anxiety, depression, loss and grief, but these programs focus around a specific topic orientation and fail to take a meta perspective of the change process under which each of these topics may be subsumed. A model for handling change and transition has been introduced by Presley, Karmos, and Daniels (1984) which is a comprehensive approach for assisting individuals in gaining resources and increasing options to build and survive the future.

The current model is an attempt to fulfill a perceived need of counselors and is presented below in its questioning format. It has been the authors' experience that by exploring each question under each of the steps of the model, clients may 1) become aware that transitions and change are inevitable and natural and that there are many resources and options with which manage these events, and 2) that through renewed, focused awareness of their values, competencies and interpersonal skills that they have the capabilities to cope with and manage transitions in the future. We have found this model to be versatile. It is applicable to transitions ranging from career choices, to job loss, to experiencing loss of friendship or dealing with death or divorce.

Model For Handling Transitions

I. IDENTIFY THE TRANSITION

- What has ended? (something personal, interpersonal, family, school, friends)

- Was this transition expected, unexpected, part of a chronic hassle?
- How much stress are you under? What is causing it?
- What fears do you have? Be specific.
- Describe the transition as best as you can.
- What kinds of things are changing in your life? (people, job, school, values)
- What is the impact on you? How do you feel about the transition?

II. IDENTIFY COPING RESOURCES

Support Network:

- Who can help you?
- Who could provide a personal support network? (emotional, physical, group, individual)
- How can you help yourself?

Coping Responses:

- What coping responses are you using now?

Depression
Anxiety
Denial
Sadness
Hostility
Isolation
Preoccupation
Jealousy
Helplessness

- What coping responses are you using that are helpful?
- What are some of your options? List them.
- Will preplanning help you cope with the hardest part of the transition?

Solving a Problem:

- Remember the 5 main steps for solving a problem.
 - 1) Understanding the problem (transition).
 - 2) Brainstorm for solutions.
 - 3) Choose a tentative solution.
 - 4) Implement the solution.
 - 5) What did you learn?
- What obstacles do you have to overcome in order to change? (financial, psychological, interpersonal)
- How might you benefit or not benefit from the transition?

III. IDENTIFY AND CHOOSE WAYS OF MANAGING THE TRANSITION

- a) What are various alternative actions for coping?
 - Maybe a problem has to be solved. If so, use the 5-step model.
 - Individual or group counseling is always a possibility.
 - Do you need to learn new coping skills? (relaxation skills, exercise program, time management, health care, etc.)
- b) Examine the positive and negative consequences of all planned actions.
- c) Are you taking full advantage of the "Neutral Zone"?
 - Find a regular time to be alone and to reflect on the transition.
 - Identify what you really want.
 - Reexamine your values and your goals.
- d) What do you know about yourself that you can use in managing the transition?

IV. TRIAL INTEGRATION, AND SELF-TRANSFORMATION

- As you try things out, who can you discuss them with?
- In what ways is this a positive experience? A negative one?

- How are you different?
- What did you learn from this experience? What did you learn about yourself?
- Is your grief or disappointment part of a healing process?
- What are some options open to you if you think you are not managing the transition well?
- Can you accept the transition and go on with your life?

Summary:

With change and transition becoming the rule rather than the exception it becomes evident that one of the more pressing concerns before counselors today is the task of assisting clients to identify, adapt, and manage transitions which occur developmentally, socially, and occupationally in their life courses. The management of transitions must become an integral part of the learning life of the individual. Utilizing the model which is introduced here is a step toward making sense of transitions, a possible way of viewing change as an opportunity to learn and be renewed by the myriad of demands made upon the client in their life journey.

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DEVELOP WORK RELATED PROBLEM SOLVING SKILLS

1. IDENTIFY/SPECIFY WORK RELATED PROBLEMS THAT NEED TO BE SOLVED
2. BRAINSTORM POSSIBLE SOLUTIONS TO THE PROBLEMS THAT NEED TO BE SOLVED
 - A. RECOGNIZE WORK ACTIVITIES THAT NEED TO BE PERFORMED
 - B. IDENTIFY POSSIBLE PROCEDURES FOR SOLVING PROBLEM
3. CHOOSE A DIAGRAM, CHART, AND/OR GRAPH TO ORGANIZE INFORMATION
4. CHOOSE A TENTATIVE SOLUTION TO THE WORK RELATED PROBLEMS THAT NEED TO BE SOLVED.
 - A. IDENTIFY REQUIRED KNOWLEDGE TO SOLVE PROBLEM/ PERFORM WORK ACTIVITY
 - B. ANALYZE A PROBLEM/ ACTIVITY AND BREAK IT INTO SMALLER PARTS
 - C. CREATE DIAGRAMS TO ORGANIZE INFORMATION
 - D. CREATE CHARTS TO ORGANIZE INFORMATION
 - E. CREATE GRAPHS TO ORGANIZE INFORMATION
 - F. IDENTIFY RESOURCES NEEDED TO RESOLVE THE PROBLEM/COMPLETE THE TASK
 - G. OBTAIN RESOURCES NEEDED TO RESOLVE THE PROBLEM/COMPLETE THE TASK
 - H. INTERPRET INFORMATION QUANTITATIVELY
 - I. INTERPRET INFORMATION QUALITATIVELY
 - J. FORMULATE ALTERNATIVE STRATEGIES FOR SOLVING THE PROBLEM/COMPLETING THE ACTIVITY
 - K. SELECT EFFICIENT STRATEGIES FOR PROBLEM SOLVING/COMPLETING THE ACTIVITY
5. IMPLEMENT THE SOLUTION TO THE WORK RELATED PROBLEM
 - A. IDENTIFY RESOURCES NEEDED TO RESOLVE THE PROBLEM/COMPLETE THE TASK
 - B. OBTAIN RESOURCES NEEDED TO RESOLVE THE PROBLEM/COMPLETE THE TASK
 - C. REVIEW PROGRESS TO INSURE TIMELY RESOLUTION/COMPLETION OF PROBLEM/ACTIVITY
6. EVALUATE THE SOLUTION TO THE WORK RELATED PROBLEM
 - A. EVALUATE THE UTILITY AND ADEQUACY OF PROBLEM SOLVING/ ACTIVITY COMPLETION STRATEGIES
 - B. REACH SOLUTION AND/OR MAKE REASONABLE CONCLUSIONS AS A RESULT OF A PROBLEM SOLVING/WORK ACTIVITY
 - C. SUMMARIZE AND COMMUNICATE RESULTS OBTAINED DURING PROBLEM SOLVING/WORK ACTIVITY
7. SELECT/APPLY ANOTHER STRATEGY FOR SOLVING THE WORK RELATED PROBLEMS THAT NEED TO BE SOLVED (IF NEEDED)
 - A. APPLY ALTERNATIVE STRATEGIES FOR PROBLEM / COMPLETING THE ACTIVITY (IF NEEDED)
8. APPLY THE PROBLEM-SOLVING MODEL TO DEVELOP NEW IDEAS AND APPROACHES.
 - A. APPLY RESULTS OF PROBLEM SOLVING/WORK ACTIVITY TO DEVELOP NEW IDEAS AND/OR BETTER PROBLEM SOLVING/WORK ACTIVITY APPROACHES

TRANSITION SKILLS

1. DEVELOP TRANSITION RECOGNITION SKILLS- WHAT HAS ENDED ?
 - A. IDENTIFY TRANSITION
 - B. DESCRIBE RESULTING STRESS FROM TRANSITION (IMMEDIATE PERSONAL REACTION)
 - C. IDENTIFY CHANGES IN ASSUMPTIONS ABOUT SELF/OTHERS
2. IDENTIFY COPING RESOURCES
 - A. IDENTIFY SUPPORT SYSTEMS
 - B. LIST INTERPERSONAL STRENGTHS
 - C. IDENTIFY SURVIVAL NEEDS
 - D. IDENTIFY IMMEDIATE COPING RESPONSES/ALTERNATIVE COPING STRATEGIES
3. IDENTIFY DESIRED OUTCOME OF TRANSITION
4. USE A PROBLEM SOLVING MODEL TO MANAGE TRANSITIONS
 - A. IDENTIFY PROBLEM
 - B. DETERMINE ALTERNATIVES
 - C. SELECT ALTERNATIVES
 - D. IMPLEMENT SOLUTION TO THE PROBLEM
 - E. EVALUATE IMPLEMENTED SOLUTION
5. CARRY FORWARD COPING SKILLS TO FUTURE TRANSITIONS
 - A. DESCRIBE CHANGE IN SELF UPON COMPLETION OF TRANSITION
 - B. DESCRIBE ACQUIRED SKILLS AS A RESULT OF GOING THROUGH THE TRANSITION
 - C. APPLY KNOWLEDGE AND SKILLS TO FUTURE TRANSITION

INTERPERSONAL PROBLEM SOLVING SKILLS

1. IDENTIFY WHO HAS A PROBLEM- WHO IS UPSET
2. EXHIBIT LISTENING SKILLS
 - A. IDENTIFY VALUES, NEEDS, AND FEELINGS
 - B. USE REFLECTIVE STATEMENTS TO CLARIFY MESSAGES
3. IDENTIFY COMMUNICATION ROADBLOCKS
4. PARTICIPATE IN A BRAINSTORMING SESSION
 - A. EXHIBIT NON-EVALUATIVE BEHAVIOR
 - B. CONTRIBUTE IDEAS TO SESSION
5. ANALYZE AND COMMUNICATE MEANINGS AND FEELINGS OF OTHERS
6. USE ASSERTIVE I MESSAGES(IE. DESCRIBE BEHAVIOR,EFFECT, AND FEELINGS OF BEHAVIOR)
7. INVOLVE OTHERS IN PROBLEM SOLVING PROCESS
8. USE THE 5 STEP PROBLEM SOLVING MODEL
 - A. IDENTIFY PROBLEM
 - B. DETERMINE ALTERNATIVES
 - C. SELECT ALTERNATIVES
 - D. IMPLEMENT SOLUTION TO THE PROBLEM
 - E. EVALUATE IMPLEMENTED SOLUTION

DEVELOPING PRETECHNICAL CURRICULA

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PRELIMINARY EXECUTIVE SUMMARY

Today, most people are ill prepared to cope with workplace changes that occur during their lifetimes. Rapid technological advances have transformed not only present work life, but have drastically altered expectations for the future.

Even now, workers are continually confronted with change. Traditional views of labor and management are rapidly changing as the economy moves from an industrial to an informational base. The composition of the work force is changing, too. Technological advances in equipment and techniques are making jobs obsolete. More workers are experiencing the reality of changing jobs or entering retraining programs. The prospect of multiple job changes during the life span is becoming certain. Tomorrow's workers will be confronted with even more changes.

The authors of this paper examine changes in the workplace and suggest ways educators can cope with changes brought about by technological advances. The authors recommend a pretechnical curriculum that will provide students with basic generalizable skills, transition skills, and problem-solving skills. These skills are viewed as the best preparation for work, given the rapid pace of job changes. The essential characteristics of pretechnical curricula described in this paper provide curriculum developers with the basis for designing such curricula.

Vocational education always has been influenced by technological innovations that have altered the requirements of occupations and work environments. In fact, a central feature of vocational education programs typically was specialized job skills training. Vocational training programs have been most effective when they emphasize highly specialized skills that are tied to specific needs of employers, particular equipment, or production processes. Programs of this type have enjoyed a long and strong tradition among vocational educators and, in the past, have often been very successful. Specialized skills continue to be important, but workers must prepare for retraining experiences during their work life. The rapid increase in technological change requires an emphasis on human factors in the workplace.

Human resources are increasingly recognized to be the least understood and most underutilized element in the workplace. Some experts have suggested that the future of the marketplace depends on the ability of business and industry to maximize the personal power of work force members. An increase in personal power is dependent on an individual's ability to learn new ways to adapt to impending change.

Vocational educators must accept new responsibilities for preparing students to work and live in a technological world. In addition to job skill training, vocational educators must now consider two important and related tasks. The first task involves the identification and development of skills needed to prepare individuals for career progression, as well as career entry. Most graduates start with available entry-level occupations, but they must undertake more education, training, and retraining. The second task concerns the integration of that knowledge into an implemented curriculum in the schools. The thrust of this paper is directed toward implementation at the secondary school level. However, implementation of a pretechnical curriculum at the postsecondary level should not be ruled out.

This paper presents a model for a pretechnical curriculum, with special emphasis on human factors at the workplace. The model focuses on self-empowerment, or the individual's ability to understand and to deal effectively with events that influence career changes. An individual's self-empowerment is related to his or her mastery of three categories of interrelated skills and knowledge. These form the core of the pretechnical curriculum proposed in this paper. They are as follows:

Generalizable skills and knowledge--skills and knowledge actively used in work performance, that are transferable across jobs and occupations and that are instrumental to job and classroom success

Transition skills and knowledge--skills and knowledge used to manage life transitions, particularly occupationally related ones such as job loss, job change, promotions, demotions, and so on

Problem-solving skills and knowledge--skills and knowledge employed in the resolution of situations involving interpersonal problems, information and task-related problems, or problems related to people's behavior in cooperative group settings

Core knowledge in these areas precedes and supplements more specialized technical knowledge acquired later during the education cycle. This core knowledge is applicable to a wide variety of jobs and occupations. It can be integrated with scientific concepts underlying the cluster of occupations selected by the student as a career education emphasis.

This publication recommends ways to implement the concepts in this curriculum and confronts issues and problems associated with the introduction of this pretechnical curriculum in vocational education.

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